

IN THE CLAIMS

Please substitute the following claims for the previous listing of claims:

1. (Currently amended) A method of cleaning a chamber of an electron beam treatment apparatus, the method comprising:
generating an electron beam current though a cleaning gas to energize
~~the that energizes~~ a cleaning gas in the chamber of the electron beam treatment apparatus;
monitoring an electron beam current;
adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and
stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a predetermined length of time.
- 2-3. (Cancelled).
4. (Original) The method of claim 1 wherein the cleaning gas comprises an oxygen-based gas.
5. (Original) The method of claim 4 wherein the oxygen-based gas comprises one or more of O₂, ozone, NO, and H₂O.
6. (Original) The method of claim 1 wherein the cleaning gas comprises a fluorine-based gas.
7. (Currently amended) The method of claim 6 wherein the fluorine-based gas comprises one or more of NF₃, F₂, CF₄, C₂F₆, C₃F₈[,] and SF₆.

8. (Currently amended) A method of cleaning an electron beam treatment chamber, the method comprising:
generating an electron beam current though a cleaning gas to energize
the that energizes a cleaning gas in the electron beam treatment chamber; and
stopping the flow of cleaning gas after the cleaning gas pressure becomes substantially constant for a predetermined length of time.
9. (Original) The method of claim 8 wherein the cleaning gas comprises an oxygen-based gas.
10. (Original) The method of claim 9 wherein the oxygen-based gas comprises one or more of O₂, ozone, NO, and H₂O.
11. (Original) The method of claim 8 wherein the cleaning gas comprises a fluorine-based gas.
12. (Currently amended) The method of claim 11 wherein the fluorine-based gas comprises one or more of NF₃, F₂, CF₄, C₂F₆, C₃F₈[[,]] and SF₆.
13. (Original) The method of claim 8 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.
14. (Original) The method of claim 9 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.
15. (Original) The method of claim 11 wherein a gas pressure of about 1 Torr or greater is maintained in the chamber.

16. (Currently amended) A method of cleaning a chamber of an electron beam treatment apparatus, the method comprising:
- introducing a cleaning gas into the chamber;
 - generating an electron beam current through the cleaning gas to energize ~~that energizes~~ the cleaning gas in the chamber;
 - setting in the chamber, an electron beam current of about 1 40 mA or above;
 - adjusting a pressure of the cleaning gas to maintain the electron beam current at a substantially constant value; and
 - determining an endpoint of the cleaning process and stopping introduction of the cleaning gas when the cleaning gas pressure reaches a substantially constant value and maintains the value for a length of time of 5 seconds.
17. (Previously presented) The method of claim 16 wherein the cleaning gas comprises an oxygen-based gas.
18. (Previously presented) The method of claim 17 wherein the oxygen-based gas comprises one or more of O₂, ozone, NO, and H₂O.
19. (Previously presented) The method of claim 16 wherein the cleaning gas comprises a fluorine-based gas.
20. (Currently amended) The method of claim 19 wherein the fluorine-based gas comprises one or more of NF₃, F₂, CF₄, C₂F₆, C₃F₈[[,]] and, SF₆.
21. (Previously presented) The method of claim 1 comprising stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a length of time of 5 seconds.

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22. (Previously presented) The method of claim 8 comprising stopping the flow of cleaning gas when the cleaning gas pressure becomes substantially constant for a length of time of 5 seconds.

23. (New) The method of claim 16 comprising setting in the chamber, an electron beam current of about 10 mA or above.